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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
| 10/582,919 | 04/12/2007 | Jan Hall | NOBELB-243NP | 9222 |
| 20995 | 7590 | 08/18/2010 | EXAMINER | |
| KNOBBE MARIENTS OLSON & BEAR LLP | | | MAI, HAO D | |
| 2040 MAIN STREET | | | ART UNIT | PAPER NUMBER |
| FOURTEENTH FLOOR | | | | |
| IRVINE, CA 92614 | | | 3732 | |
| NOTIFICATION DATE | | DELIVERY MODE | | |
| 08/18/2010 | | ELECTRONIC | | |

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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| | | |
|------------------------------|--------------------------------------|----------------------------------|
| Office Action Summary | Application No. 10/582,919 | Applicant(s) HALL, JAN |
| | Examiner HAO D. MAI | Art Unit 3732 |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If no period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(o).

Status

- 1) Responsive to communication(s) filed on 28 June 2010.
 2a) This action is FINAL. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-5,7-10,12 and 14-17 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 1-5,7-10,12 and 14-17 is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
 3) Information Disclosure Statement(s) (PTO/SB/08)
 Paper No(s)/Mail Date _____
- 4) Interview Summary (PTO-413)
 Paper No(s)/Mail Date _____
- 5) Notice of Informal Patent Application
 6) Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 06/28/2010 has been entered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. **Claims 1-2, 4-5, 7-10, 12, and 14-17, are rejected under 35 U.S.C. 103(a) as being unpatentable over Stevens (3,579,831) in view of Hansson et al. (5,588,838).**

Regarding claim 1, Stevens discloses a dental implant 20 capable of being inserted into a hole formed in the jaw bone 12/10 and overlying soft tissue 16, the dental implant 1 comprising: an upper portion 38 capable of being placed against an upper edge of the jaw bone 12/10 (Figs. 1-2). The upper portion 38 comprises at least one groove 58 which extends all around an outer surface of the upper portion to form a closed loop and which extends substantially in a cross section substantially at right angles (i.e. perpendicular) to the longitudinal axis of the implant (Figs. 1-3). The groove 58 is shown to have a cup-shaped cross section.

Stevens discloses the invention substantially as claimed except for the ranges for the depth and width of the groove 58. Hansson et al. disclose a dental implant having micro threads or grooves at the upper portion of the implant, wherein each thread/groove has a height/depth of between 0.02 and 0.20 mm and a width (crest to crest) of approximately twice the height of the thread/groove (abstract). Such dimension is converted to be 20 – 200 µm in depth and 40 – 400 µm in width, which overlap the claimed ranges of depth and width. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Stevens by making the annular groove 58 with a depth and a width within the respective ranges as taught by Hansson in order to optimize osseointegration of the implant to the bone tissue. Furthermore, such modification would have been well within the skill of an artisan since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

As to claim 2 and 4-5, Stevens' groove 5 is shown to have a cross section of semi-circular, hyperbola, or semi-elliptical shapes, or rectangular cross section with rounded corners (Fig. 1). **As to claims 7-8,** note that the recitations about "the ingrowth of bone" and "bone ingrowth" are not actively claimed, i.e. such "ingrowth of bone" or "bone ingrowth" are not being claimed as a limitation of the invention; and therefore is not given patentable weight. Also, such recitation conveys functional limitation, which Stevens' device is capable of performing. **As to claims 9-10,** Stevens shows the groove 58 is located at an upper part of the upper portion 38 (best shown in Figure 4) and the implant further include other coordinating grooves, e.g. grooves 22. **As to claims 12 and 14,** the claimed range of depth of about 70 µm and width of about 110 µm is within the ranges of 20 – 200 µm and 40 – 400 µm, respectively, as disclosed by Hansson. **As to claim 15,** the method of providing the dental implant and installing the

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implant into a jaw bone of a patient is naturally carried out when using the dental implant as disclosed by Stevens in view of Hansson. **As to claims 16-17**, Stevens' groove 58 is shown to be a closed continuous loop or track around the outer surface of the upper portion of the implant 20 (Fig. 1).

4. **Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Stevens in view of Hansson, according to claim 1, and further in view of Cottrell (2004/0142304 A1).**

Stevens/Hansson disclose the invention substantially as claimed according to claim 1 as detailed above. However, Stevens/Hansson fail to disclose the groove having an arc-shape that follows a corresponding arc-shaped jaw bone. Cottrell disclose a dental implant having threads/grooves 46b at an upper portion 50 (Fig. 6), wherein in one embodiment, the grooves 46b has an arc-shape that follows a corresponding arc-shaped jaw bone, i.e. coronal contour (Fig. 12; paragraph 57). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Stevens/Hansson by making Stevens' groove 58 having an arc-shape that follows a corresponding arc-shaped jaw bone in order to aid in bone preservation and coronal bone apposition as explicitly taught by Cottrell.

Response to Arguments

5. Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection. Applicant's remarks are held to be responded to in the new ground(s) of rejection as detailed above.

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to HAO D. MAI whose telephone number is (571)270-3002. The examiner can normally be reached on Monday-Friday. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cris Rodriguez can be reached on (571) 272-4964.

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The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

7. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

**/Hao D Mai/
Examiner, Art Unit 3732**

**/Cris L. Rodriguez/
Supervisory Patent Examiner, Art Unit 3732**